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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/830,479	08/08/2001	Robert Lindsay Mailler	PIZ-10102/00	8160

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EXAMINER	
TRAN, DALENA	
ART UNIT	PAPER NUMBER
3661	

DATE MAILED: 06/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/830,479	MAILLER, ROBERT LINDSAY	
	Examiner	Art Unit	
	Dalena Tran	3661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 March 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6,7 and 9-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,7, and 9-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Notice to Applicant(s)

1. This office action is responsive to the amendment filed on 3/17/03. As per request, claims 1 and 9 have been amended. Thus, claims 1-4,6-7, and 9-12, are pending.

The prior art submitted on 1/17/03 has been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-4,6-7, and 9, are rejected under 35 U.S.C.103(a) as being unpatentable over Keller et al. (6,199,000), in view of Schutten et al. (4,967,362), Dano (4,398,195), and Korver et al. (5,928,309).

As per claim 1, Keller et al. disclose a vehicle a vehicle guidance apparatus for guiding an agricultural vehicle over a paddock along a number of paths, the paths being offset from each other by a predetermined distance, vehicle including steering means, apparatus including: a satellite based geographical positioning system (GPS) receiver for periodically receiving vehicle position data and a radio modem operatively receiving positional correction factor data from a base station to correct the vehicle position data (see column 6, line 8 to column 9, line 17; and column 16, line 12 to column17, line 33). Keller et al. do not disclose relative position. However, Schutten et al. disclose relative position determining for generating relative positional data signals applicable to time periods between receipt of vehicle position data (see column 3,

line 50 to column 5, line 67; and column 8, line 39 to column 9, line 52). Keller et al. also do not disclose entry of initial path. However, Dano discloses data entry facilitating entry of an initial path by an operator and a desired offset distance between paths (see column 5, lines 20 to column 7, line 26). Also, Keller et al. do not disclose combining the corrected vehicle position and relative position data and guiding vehicle towards paths. However, Korver et al. disclose coupled to GPS receiver, radio modem and relative position determining, operatively arranged to generate paths based on initial path, processing generating a continuous guidance signal indicative of errors in the position of the vehicle relative to one of paths, with position being determined by combining the corrected vehicle position data and the relative position data signals, and guiding vehicle towards paths thereby reducing errors (see column 2, line 55 to column 3, line 31; and column 6, line 29 to column 8, line 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. by combining relative position determining, data entry facilitating entry of an initial path by an operator and a desired offset distance between paths, and processing coupled to GPS receiver, radio modem and relative position determining and operatively arranged to generate paths based on initial paths, and generating continuous guidance signal indicative of errors in the position of the vehicle relative to one of paths for guiding an agricultural vehicle, to provide highly accurate navigation and guidance information for operators to achieves meter-level accuracy by utilizing GPS position corrections transmitted from base station.

As per claim 2, Keller et al. do not disclose an indication of the direction of vehicle relative to a path closest to vehicle. However, Dano discloses microprocessor is further operatively arranged to provide an indication of the direction of vehicle relative to a path closest

to vehicle (see columns 9, line 30 to column 10, line 25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. by combining microprocessor is further operatively arranged to provide an indication of the direction of vehicle relative to a path closest to vehicle for easy to set up a baseline and the aircraft flies over the entire predetermined flight pattern base on the baseline.

As per claim 3, Dano discloses paths are straight parallel lines (see column 3, line 61 to column 5, line 19).

As per claim 7, Keller et al. do not disclose a controllable steering. However, Schutten et al. discloses guidance comprises a controllable steering coupled to processing and arranged to steer vehicle in a direction reducing error (see the abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. by combining guidance comprises a controllable steering coupled to processing and arranged to steer vehicle in a direction reducing error for guiding the vehicle along a desired path to make sure the vehicle go through every area in the path to avoid overlap or the path not go through.

As per claim 9, Keller et al. do not disclose accelerometers. However, Korver et al. disclose relative position determining comprises a number of accelerometers (see column 6, lines 29 to column 8, line 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. by combining relative position determining comprises a number of accelerometers for the accurate determination of the agricultural vehicle relative to a path.

4. Claims 4, and 6, are rejected under 35 U.S.C.103(a) as being unpatentable over Keller

et al. (6,199,000), Schutten et al. (4,967,362), Dano (4,398,195), and Korver et al. (5,928,309), as applied to claim 1 above, and further in view of Keller et al.(6,087,984).

As per claim 4, Keller et al. ('000), Schutten et al., Dano, and Korver et al. do not disclose path are concentric polygons. However, Keller et al. ('984) disclose paths are concentric polygons (see the abstract; column 2, lines 63 to column 3, line 61; and column 4, line 55 to column 5, line 7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al. ('000), Schutten et al., Dano, and Korver et al. by combining paths are concentric polygons to for efficiently dispensing chemicals or crop to variety of agricultural fields geometry.

Also as per claim 6, Keller et al. ('984) disclose guidance comprises a human interface for converting guidance signal to a format indicating error to human operator of vehicle (see column 7, line 15 to column 10, line 41).

5. Claims 10-11, are rejected under 35 U.S.C.103(a) as being unpatentable over Keller et al. (6,199,000), Schutten et al. (4,967,362), Dano (4,398,195), and Korver et al. (5,928,309), as applied to claim 7 above, and further in view of Winslow (6,314,348).

As per claim 10, Keller et al., Schutten et al., Dano, and Korver et al. do not disclose Winslow discloses solenoid mechanically coupled to steering. However, Winslow disclose controllable steering includes at least one solenoid mechanically coupled to steering, solenoid responsive to guidance signal (see column 5, line 48 to column 8, line 47). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al., Schutten et al., Dano, and Korver et al. by combining at least one solenoid

mechanically coupled to steering, solenoid responsive to guidance signal to provide a balance steering wheel to generate a desired correction.

As per claim 11, Schutten et al. discloses steerage feedback sensors operative to generate feedback signals indicative of orientation of steerable wheels or tracks, microprocessor being responsive to steerage feedback signals (see the abstract; column 2, lines 7-50; column 6, line 28 to column 8, line 36).

6. Claim 12, is rejected under 35 U.S.C.103(a) as being unpatentable over Keller et al. (6,199,000), Schutten et al. (4,967,362), Dano (4,398,195), Korver et al. (5,928,309), and Winslow (6,314,348) as applied to claim 11 above, and further in view of Travostino et al. (6,400,143).

As per claim 12, Keller et al., Schutten et al., Dano, Korver et al., and Winslow do not disclose Hall effect device. However, Travostino et al. disclose steerage feedback sensors comprises Hall effect device (see column 7, lines 4-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Keller et al., Schutten et al., Dano, Korver et al., and Winslow by combining Hall effect device to instruct the navigation system, to control the trajectory of the vehicle, and controlling of the position of vehicle.

Remarks

7. Applicant's argument filed on 3/17/03 have been fully considered but they are not deemed to be persuasive. The new ground of rejection as above as the result of the new amended claims.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136 (a).

A shorten statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE MONTHS shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136 (a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 703-308-8223. The examiner can normally be reached on M-F (7:30 AM-5:30 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Cuchlinski can be reached on 703-308-3873. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-7687 for regular communications and 703-305-7687 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

/dt
June 11, 2003

TAN Q. NGUYEN
PRIMARY EXAMINER